

# POWDER TROUBLE PREVENTION EQUIPMENT

## Troubleshooting

Trouble Prevention Equipment Catalog

Air Knocker

Engineering Plastic Knocker

Jet Blaster

Piston Vibrator

Rorary Catcher

Grate Magnets

Ceramic Hose

CHIYODA KOHAN (S) PTE LTD  
1092 Lower Delta Road #01-08  
Singapore 169203  
Tel: (65) 6278 6780 Fax: (65) 6278 6779

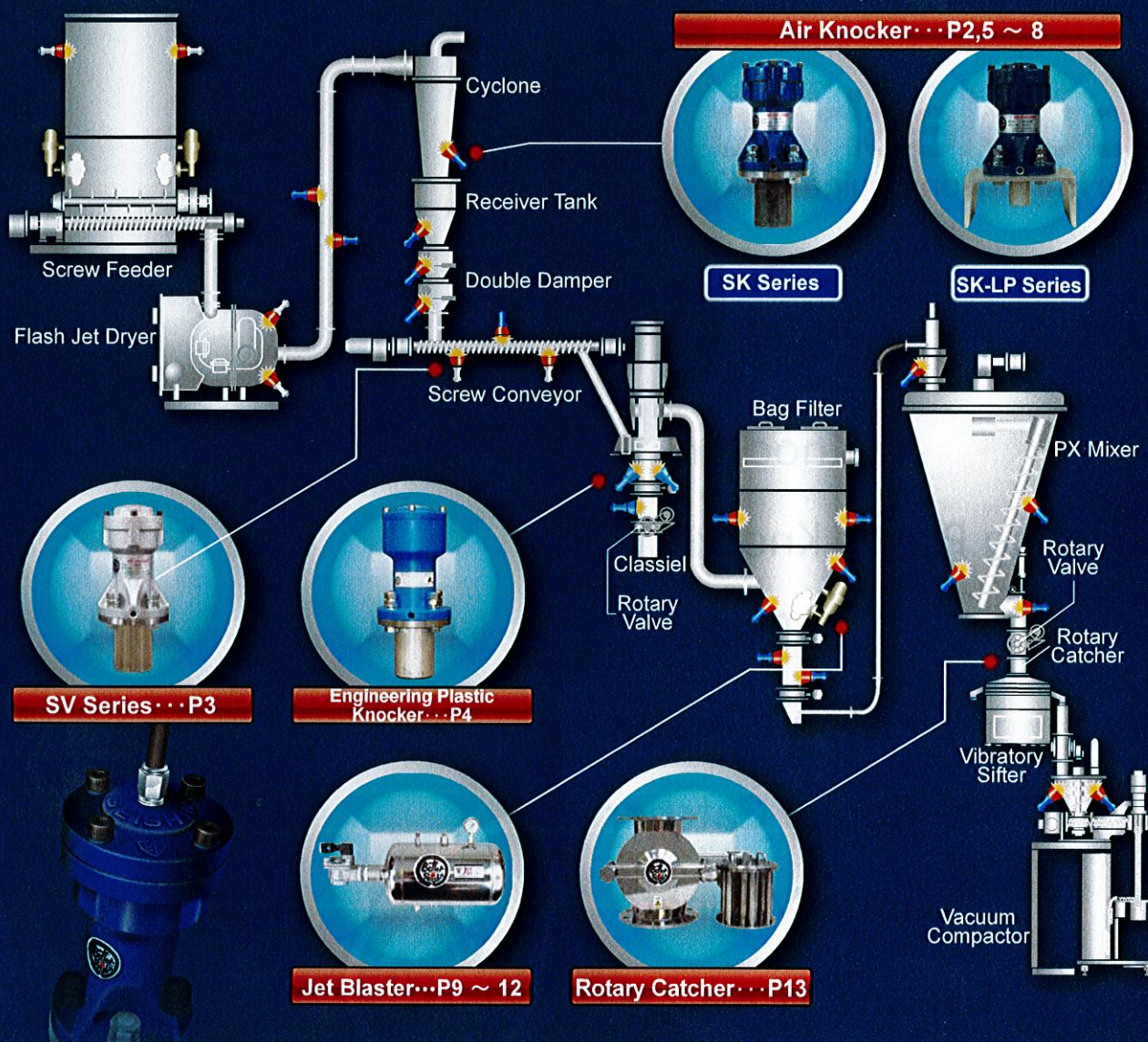


**SEISHIN**  
ENTERPRISE CO., LTD.





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#### Powder trouble solving equipment / Index

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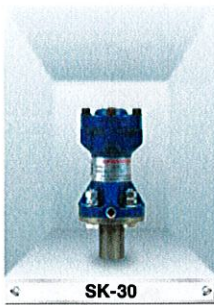


Magnet type air knocker boasts many years of experience

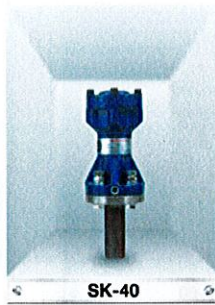
# Air Knocker Standard type

SK Series

Troubleshooting  
Trouble Prevention Equipment Catalog



SK-30



SK-40



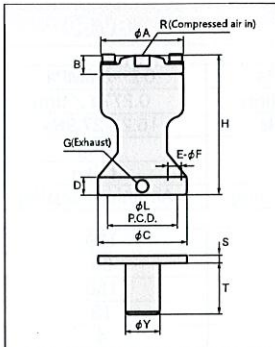
SK-60



SK-80



SK-100



※Total weight includes weight of base bolt and base plate. Paint color : Mancell5PB3/9

▲ Please attach the Airknocker SK type to the base plate and operate it.

▲ If it is operated only with the main body, the inside may be damaged.

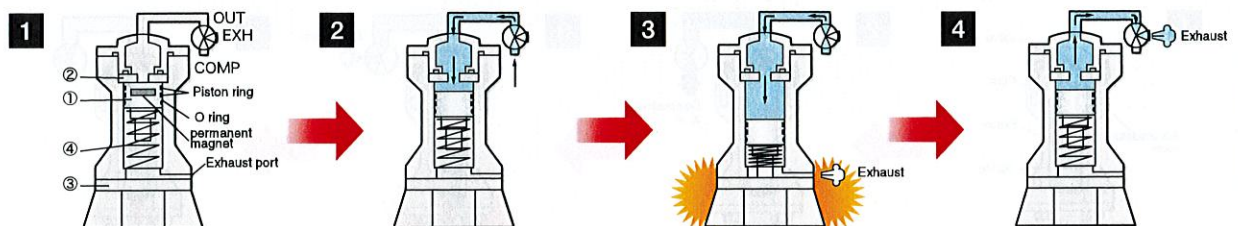
▲ Fall prevention wire is optional, but please be sure to install it.

▲ Please attach reinforcing ribs referring to "Air knocker mounting method" on page 8.

Model	SK-30	SK-40	SK-60	SK-80	SK-100
Pressure	0.35~0.6MPa	0.35~0.6MPa	0.35~0.6MPa	0.35~0.6MPa	0.35~0.6MPa
Air consumption	0.028ℓ/time	0.082ℓ/time	0.228ℓ/time	0.455ℓ/time	1.012ℓ/time
Impact power	1.0~1.5Ns	3.3~5.1Ns	7.1~10.8Ns	19.3~29.5Ns	44.5~67.9Ns
Body weight	0.7kg	1.8kg	4.6kg	7.9kg	23.5kg
Total weight	1.0kg	2.9kg	7.8kg	11.8kg	35.2kg
Body material	Aluminium casting	Aluminium casting	Aluminium casting	Aluminium casting	Casting iron
Dimension					
φA	65	90	120	139	176
B	15	22	30	40	44
φC	70	95	140	150	210
D	10	16	16	18	24
E	4	4	4	4	6
F	9	11	15	17	21
G	1/8	1/8	1/4	3/8	3/8
H	110	160	210	250	328
φL	55	70	110	120	170
S	6	12	12	14	22
T	40	90	100	110	145
φY	27.2	34.0	76.3	76.3	114.3
R	1/4	1/4	1/4	3/8	3/8

(mm)

## Air knocker SK type operation principle



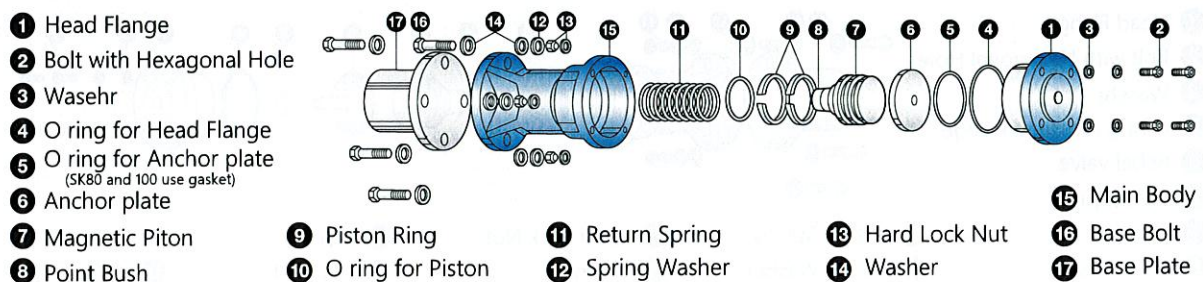
When air pressure is not infused into the cylinder from the three-phase solenoid valve, the magnetic piston① attaches the Anchor plate② firmly.

Turn on the switch to electrify the Three-phase solenoid valve. When air pressure becomes enough to detach the Magnetic piston from the Anchor plate, the Magnetic piston hits the Base plate③ with a high velocity.

The Base plate indirectly transmits a shock to the inside of a hopper, which breaks down the bridge or formation of powder in the hopper.

Turn off the switch and the compressed air remaining in the Cylinder is exhausted through the three-phase solenoid valve. The Magnetic piston is replaced by the Return spring④.

## Part drawing of Air knocker SK type and part names



① Head Flange

② Bolt with Hexagonal Hole

③ Washer

④ O ring for Head Flange

⑤ O ring for Anchor plate

(SK80 and 100 use gasket)

⑥ Anchor plate

⑦ Magnetic Piton

⑧ Point Bush

⑨ Piston Ring

⑩ O ring for Piston

⑪ Return Spring

⑫ Spring Washer

⑬ Hard Lock Nut

⑭ Washer

⑮ Main Body

⑯ Base Bolt

⑰ Base Plate

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1092 Lower Delta Road #01-08

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Trouble Prevention Equipment Catalog Troubleshooting



Exclusive for air knocker and engineering plastic knocker

# Control Box



Model	SE-710	SE-720
Power supply	1Ph, AC100V	1Ph, AC200V
Specification	Indoor type	
Paint	Munsell 5Y7/1	
Dimension	200W x 120D x 250H	
Weight	Approximately 4.2 kg	
Timer specification	Analog timer Impact interval time : 0.5sec ~ 30hr Air supplying time : 0.5sec ~ 14 range switching	
Required air pressure	0.35 - 0.6MPa	
Capacity (Controllable quantity of Air knocker)	SK-30:8units / SK-40:6units / SK-60:6units SK-80:4units / SK-100:2units	



Model	SE-1310	SE-1320
Power supply	1Ph, AC100V	1Ph, AC200V
Specification	Outdoor type (Dustproof and waterproof structure)	
Paint	Munsell 5Y7/1	
Dimension	350W x 150D x 400H	
Weight	Approximately 12.3 kg	
Timer specification	Analog timer Impact interval time : 1sec ~ 60hr Air supplying time : 0.1sec ~ 16 range switching	
Required air pressure	0.35 - 0.6MPa	
Capacity (Controllable quantity of Air knocker)	SK-30:8units / SK-40:6units / SK-60:6units SK-80:4units / SK-100:2units	



Model	SE-2100	SE-2200
Power supply	1Ph, AC100V	1Ph, AC200V
Specification	Indoor type / Continuous hit type	
Paint	Munsell 5Y7/1	
Dimension	250W x 120D x 300H	
Weight	Approximately 5.5 kg	
Timer specification	Analog timer Impact interval time : 0.5sec ~ 30hr Air supplying time : 0.5sec ~ 14 range switching	
Required air pressure	0.35 - 0.6MPa	
Capacity (Controllable quantity of Air knocker)	SK-30:8units / SK-40:6units / SK-60:6units SK-80:4units / SK-100:2units	



Model	SA-1000
Power supply	Air control (No electricity)
Specification	Outdoor type (Dustproof and waterproof structure)
Paint	Munsell 5Y7/1
Dimension	400W x 200D x 300H
Weight	Approximately 10.8 kg
Timer specification	Air timer Impact interval time : 1sec ~ 180sec Air supplying time : 0.1sec ~ 30sec 16 range switching
Required air pressure	0.4 - 0.6MPa
Capacity (Controllable quantity of Air knocker)	SK-30:8units / SK-40:6units / SK-60:6units SK-80:4units / SK-100:2units

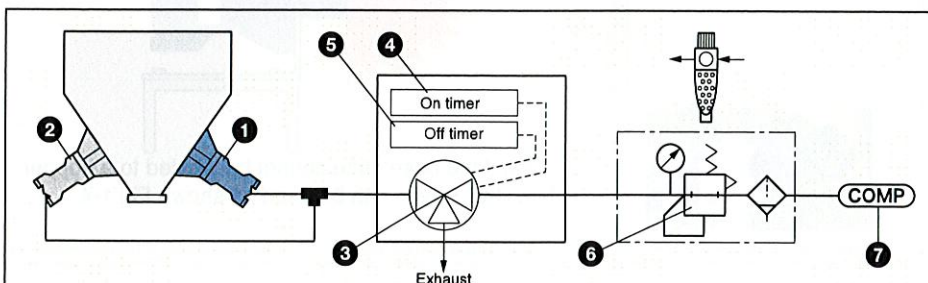


Model	SA-01
Power supply	Air control
Specification	Indoor and outdoor type
Paint	—
Dimension	150W x 120D x 260H
Weight	Approximately 2 kg
Timer specification	Speed controller Impact interval time : 10sec ~ 60sec Air supplying time : —
Required air pressure	0.35 - 0.6MPa
Capacity (Controllable quantity of Air knocker)	SK-30:8units / SK-40:6units / SK-60:6units SK-80:4units / SK-100:2units

## Production of special order control panel, Improvement of current control panel

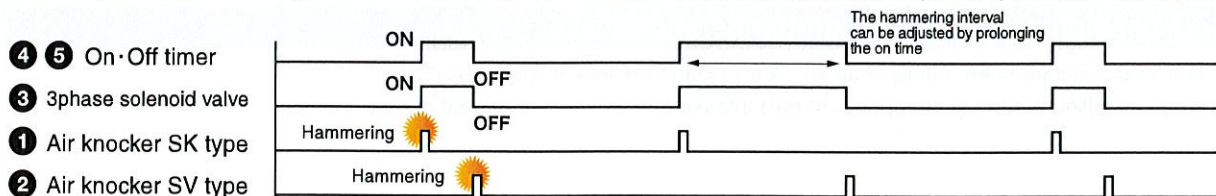
In accordance with your request, we will also manufacture custom control panels such as changing the material of the box, increasing the number of control circuits, adapting to electrical explosion-proof specifications, and designating IP standards.  
Please contact us for details.

## Sequential operation of Air knocker



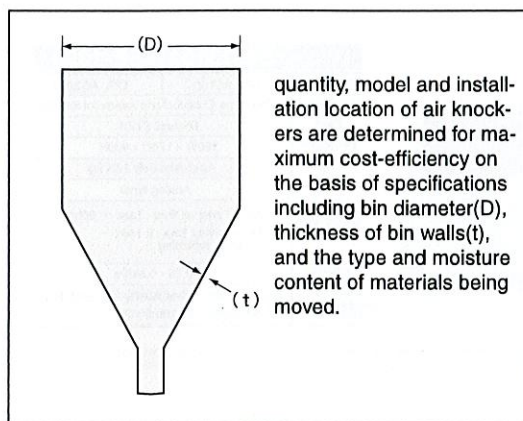
- 1 Air knocker SK type
- 2 Air knocker SV type
- 3 3phase solenoid valve
- 4 Solenoid valve On timer
- 5 Solenoid valve Off timer
- 6 Filter, Regulator, Lubricator
- 7 Compressed air source

By using SK type and SV type in combination, the two knockers repeat the operation sequentially with time difference.



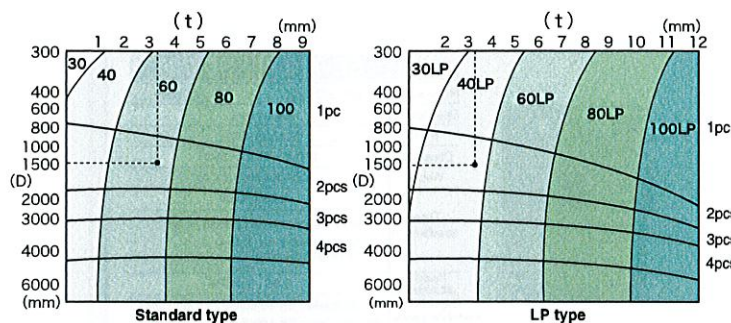


## About the model choice of Air knocker



Example) In case of the hopper diameter(D) is 1500mm and the plate thickness(t) is 3.2mm.

Standard type SK60 - 2pcs / LP type SK40LP - 2pcs



### ▼ In case of hesitation on model selection

**SK Series** ... It is a standard of the knocker that boasts many years of experience. It is used all over the world.

**SV Series** ... By pressure adjustment, impact force can be varied, so it can be used under optimal conditions.

**SKL Series** ... This type is a series that you can use even in clean environments such as pharmaceuticals and food plants. Weight reduced by making it a body made from resin.

## About Air knocker mounting position

Fig.1-1 Usual condition

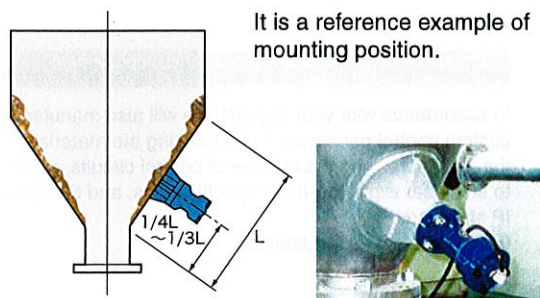


Fig.1-2 Bad flow ability

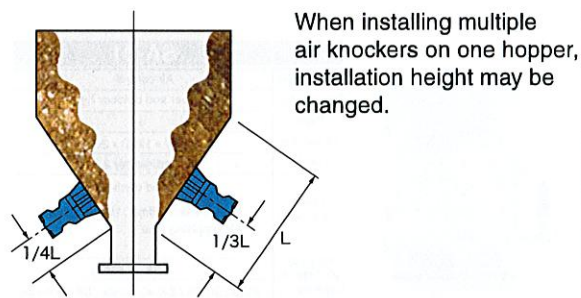


Fig.1-3 On piping

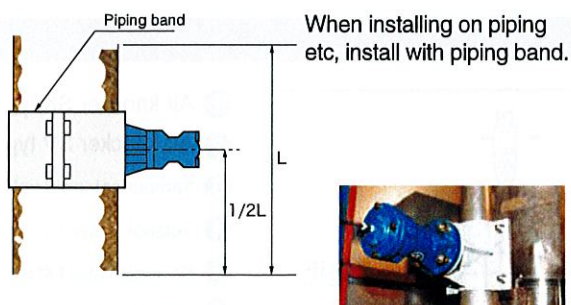
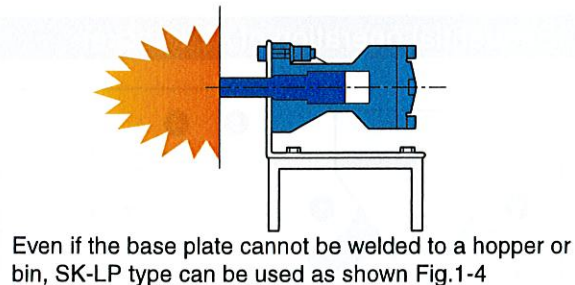


Fig.1-4 In case of the object is a rotating body



### In case of installing in a high-temperature place

The heat-resistant temperature of air knocker of standard specification is 60°.

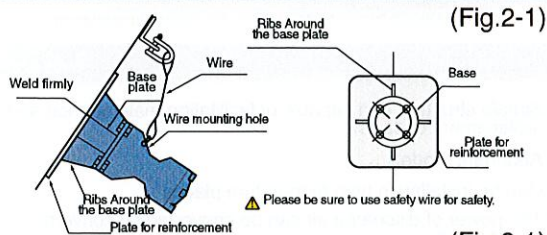
When installing to the high temperature part, please use air knocker of heat resistant specification.

Please contact the dealer for details.



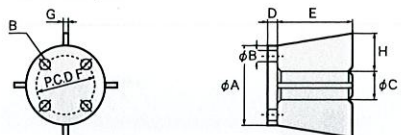
## Mounting method of Air knocker

## ▼ Standard type



(Fig.2-1)

## ▼ Air knocker base plate dimensions



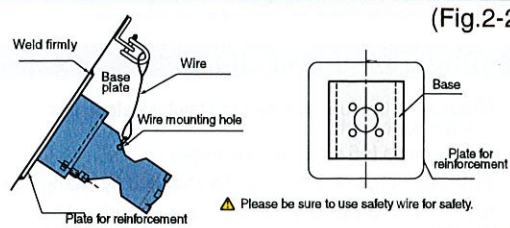
(Fig.3-1)

△ Please be sure to attached base plate ribs for safety.

Model	φA	B	φC	D	E	P.C.D.F	Gx No.	H
SK-30	70	4-φ9	27.2(3/8)	6	40	55	4.5x4	35
SK-40	95	4-φ14	34.0(1 1/8)	12	90	70	6x4	45
SK-60	140	4-φ16	76.3(2 7/8)	12	100	110	6x4	60
SK-80	150	4-φ18	76.3(2 7/8)	14	110	120	6x4	70
SK-100	210	6-φ22	114.3	22	145	170	12x6	90

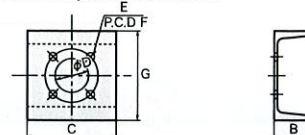
(mm)

## ▼ LP type



(Fig.2-2)

## ▼ Air knocker base plate dimensions



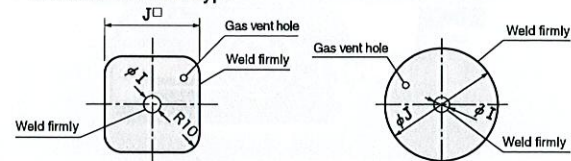
(Fig.3-1)

Model	B	C	φD	E	P.C.D.F	G
SK-30LP	50	100	25	4-φ9	55	100
SK-40LP	75	150	47	4-φ14	70	150
SK-60LP	90	200	64	4-φ16	110	200
SK-80LP	90	200	75	4-φ18	120	200
SK-100LP	90	250	85	6-φ22	170	250

(mm)

- ① Attache a base plate on an object by welding firmly.  
In case that the wall of the object is thin, put a plate for reinforcement of the object before attaching ribs around the base plate.
- ② Attach ribs around the base plate for reinforcement.  
(Refer Fig.3-1)
- ③ Attach an air knocker on the base plate by bolts.  
Tighten a hard lock nut firmly.
- ④ Link a chain or wire between the wire hall of air knocker and the stage for safety. (Refer Fig.2 and page9)

## ▼ Dimension of plate for reinforcement (Reference) (Fig.4)



(Fig.4)-1 (t=3~5mm)

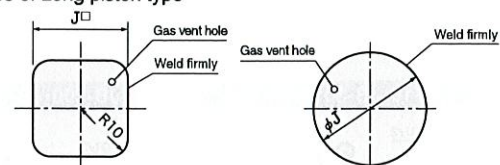
(Fig.4)-1 (t=3~5mm)

Model	φI	φJ · J□
30	5	150
40	15	250
60	40	300
80	40	350
100	40	450

※ Reference example

(mm)

## ▼ Dimension of plate for reinforcement (Reference) (Fig.5)



(Fig.5)-1 (t=3~5mm)

(Fig.5)-1 (t=3~5mm)

Model	φJ · J□
30	150
40	250
60	300
80	350
100	450

※ Reference example

(mm)

## Recommended welding rod

## • In case of SS

【For manual】···JIS Z3211 E4316 equivalency product

【Semi automatic】···JIS Z3312 YGW12 equivalency product

## • In case of SUS304

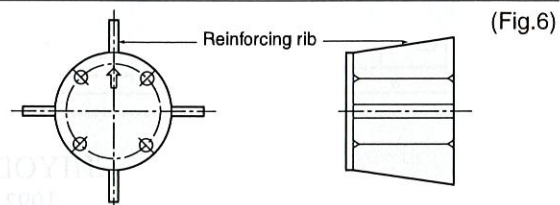
【For manual】···JIS Z3221 ES308-16 equivalency product

【Semi automatic】···JIS Z3323 T308-FB0 equivalency product

【TIG welding】···JIS Z3321 YS308 equivalency product

Please attach the base plate in the arrow direction as shown in Fig. 6 against the object to be mounted.

This method is because the four base bolts are equally loaded and the adverse effect on the knocker body is small.



(Fig.6)